Operator PROD_MATR_CHAM

1 Goal

To carry out the product of a matrix by a vector.

The matrix is a structure of data of the type matr_asse: it is with actual values or complex, symmetrical or not symmetrical. The vector is a structure of data of the type cham_no. It is with actual values or complex. One imposes who matrix and vector are both to actual values or both with complex values (if not to use the orders before COMB_MATR_ASSE [U4.72.01] or CREA_CHAMP [U4.72.04]) and that they divide same classification (see order NUME_DDL [U4.61.11]).

Product a concept of the type cham_no.
2 Syntax

uass [cham_no] = PROD_MATR_CHAM ( 
   ♦ MATR_ASSE = m, / [matr_asse_DEPL_R] / [matr_asse_TEMP_R] / [matr_asse_DEPL_C] / [matr_asse_PRES_C] 
   ♦ CHAM_NO = U, [cham_no] 
   ◊ TITLE = titr, [l_Kn] 
   )

Size associated with the cham_no result with the order (uass) is the same one as that of U.
3 Operands

3.1 Keyword MATR_ASSE
- MATR_ASSE = m
  Name of the matrix (concept matr_asse_*) to multiply.

3.2 Keyword CHAM_NO
- CHAM_NO = U
  Name of the vector (concept cham_no) to multiply.

3.3 Keyword TITLE
- TITLE = titr
  Title which one wants to give to the result.

4 Checks

- Checking that the matrix and the vector to be multiplied are both to actual values or both with complex values.
- Checking of coherence: operands of the type matr_asse_* and of type cham_no must share same classification.

5 Example of use

Product stamps vector:

\[
\text{u\_mv\_1} = \text{PROD\_MATR\_CHAM}\ (\ \text{MATR\_ASSE} = \text{mat\_1}, \\
\text{CHAM\_NO} = \text{u\_1})
\]

For example, one can use this order to create a vector second member resulting from the product of the matrix of mass and a vector acceleration obtained by the order DYNA\_LINE\_TRAN. This vector second member can be used as loading for a static calculation.